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# **Agile IT Staffing Strategies: Determinants and Impacts**

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## **Abstract**

In this research, we develop a conceptual model for IT staffing agility. The lack of adequate manpower for staffing IT-related projects has been recognized as a major stumbling block in the economic growth and expansion of IT. Organization agility in procuring the necessary skilled IT manpower will be a determinant factor in their competitive position in the market. The rapid pace of change in the IT environment has made this task at the same time difficult and critical. The demand for agile staffing strategies raises a number of issues, including staffing acquisition, maintenance, training, and competitiveness. In dealing with these issues, we identify three broad strategies for IT staffing: outsourcing, inhousing and mixing. In this paper, we develop a conceptual model to theoretically explain why certain staffing strategies should be emphasized. We then investigate factors that impact IT staffing as well as the evaluation of the agility of the IT staffing strategies based on intellectual capital.

## **Staffing Agility**

As the global economy becomes more competitive and the customer base becomes more saturated, organizations look to information technology (IT) to provide creative impetus for increasing their competitiveness and profit. At the same time, the IT environment is characterized by increasing speed of change and innovation. In such an environment, the skill requirements of IT staff changes constantly and the issue of IT staffing becomes increasingly critical to the success of business strategies. Organizations need to have an agile staffing policy that can keep up with the constant change and new innovations in the IT market. We define an agile staffing policy as one that is responsive to the changing needs of the organizations for skilled IT staff. Such a policy needs to deal with issues related to up-to-date IT staff, such as: 1) market shortage, 2) maintenance, 3) training, 4) competitiveness of the IT department, 5) prediction of the needed skill in the future, and 6) prediction in the IT trends in the future. The question is what possible strategies can deal with such issues.

## **Staffing Strategies**

We define three broad IT staffing strategies: outsourcing, inhousing, and mixing. In dealing with IT and other products, organizations for some time have faced the issue of “buy,” “make,” or “mix” [Williamson 1996]. We posit that the same strategies apply to the acquisition of IT skills and knowledge. At one end is the outsourcing strategy, which we define as relying on the outside source to provide the needed staff on demand. At the other end is inhousing, which we define as completely relying on the in-house resources to acquire, maintain, and train the needed IT staff. This strategy is similar to the “make” policy in IT products. The mix staffing strategy is a mix of the two extremes, which could vary in its bias towards one end as opposed to the other. The questions are: 1) what are the determinants of the IT staffing strategies, and 2) what are the consequences of such strategies on the financial and intellectual capitals of organizations.

In answering these questions, we may be able to provide insight in developing agile IT staffing strategies that could help in increasing financial and intellectual capitals of organizations.

## **The Model Development**

The theories that provide the grounding for our model development are in the areas of strategy, transaction costs and governance. In Porter’s conceptualization of competitive strategies of a business unit, barriers to entry have been identified as major factors in achieving competitive gain [Porter 1990]. Among the barriers to entry are capital requirements, economies of scale, and switching costs. Continuous training of high-skilled IT staff, needed in an inhousing strategy, could be considered as an investment in the company’s intellectual capital. The rapid and unpredictable nature of IT changes make such investments risky and uncertain. On the other hand, the outsourcing strategy may enjoy immediate cost advantages without taking into consideration the economies of scale observed by Porter due to accumulation of experience within the organization.

Williamson [1996] argues that if the outsourcer enjoys economies of scale, then outsourcing would lower the cost. On the other hand, Lacity and Hirschheim [1993 and

1995] argue that outsourcing does not always lower costs; and outsourcing contracts do not guarantee that the organization's expectations will be met.

In considering the IT staffing strategy, one must recognize the cost categories: production costs and transaction costs. Production costs involve the procurement of the needed skill and its utilization in producing the intended product or service. Transaction costs, on the other hand, involve the costs associated with monitoring, controlling, and managing transactions and relationships with outside contractors [Williamson 1996]. Lacity and Hirschheim [1993] posit that 1) based purely on production costs, outsourcing may be more advantageous, 2) purely based on transaction costs, inhousing may be more cost-effective, 3) based on both production and transaction costs, outsourcing may be a better choice (except in i. recurrent and idiosyncratic cases, ii. asset specificity with high uncertainty, or iii. small number of suppliers), and 4) less customization and more contractual control would make outsourcing more desirable.

It is obvious that transaction costs play an important role in the determination of the IT staffing strategies. The transaction cost theory [Williamson 1996; Coase 1937] synthesizes ideas and theories from contract law, economics and organization to compare alternative governance structures for specific transactions. The units of analysis are specific transactions, while markets and firms are alternative structures to carry them out most economically. The attributes of a transaction together with the cost and competence of alternative modes determine the way the transaction should be carried out. We adopt Williamson's approach in formulating the transaction

costs related to IT staffing strategies and use frequency of transactions, degree of uncertainty, and transaction specificity of assets as the determinant factors of transaction costs.

In line with Williamson's definition, we define transaction specificity in IT staffing as specialized skills that cannot be deployed in alternative uses except at some cost. We divide IT asset specificity into: job specificity, skill specificity, and site specificity.

We define frequency in the context of IT staffing as the number of times as well as the length of time that the skill would be needed.

Williamson [1996] categorizes uncertainty into behavioral and environmental types. We have added the technological category due to its critical role in IT staffing.

The objective is to economize on both production and transaction costs. The business factors also come into play in deciding on the IT staffing strategies. Loh and Venkatraman [1992 and 1993], in their model for IT outsourcing, make the production costs more specific by defining firm-based costs that include production costs as well as decision information and management costs. They also expand transaction costs by defining dyadic (or transaction-based) costs that include bargaining costs, agency costs, and influence costs in addition to transaction costs discussed above. Figures 1 and 2 summarize the conceptual model for the IT agile staffing strategies. In Figure 2, the other internal and external factors are added as the moderators.

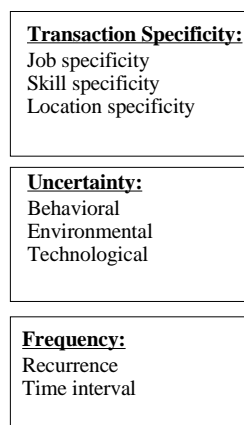


Figure 1- Determinants of Transaction Costs

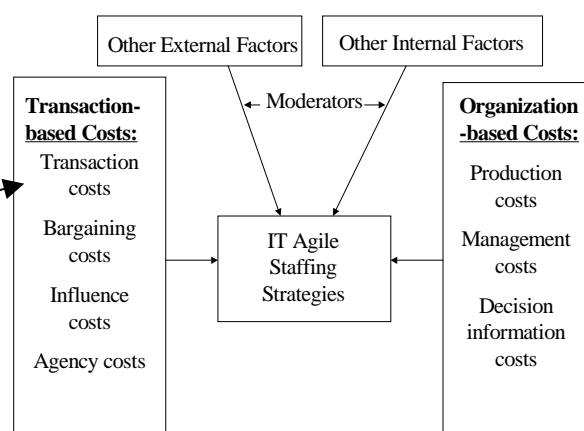
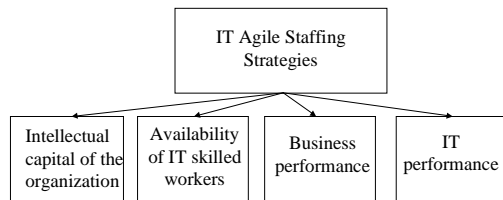


Figure 2- Modeling Determinants of IT Agile Staffing Strategies



**Figure 3- The Impact of IT Staffing Strategies on the Firm**

While Figures 1 and 2 model the determinants of the IT agile staffing strategies, we need to evaluate the impact of selecting each strategy on the firm. More specifically, we need to explore the agility of such strategies in the form of the increase in the intellectual capital of the organization and the availability of such capital on demand. Furthermore, the ultimate test of the success of each strategy should be measured by the organization's overall business performance as well as its IT performance. Figure 3 shows the evaluation model for the agility of the IT staffing strategies.

## Methodology

Based on the above model, we will carry out two case studies to make sure that all important factors and outcomes are included in the model. Contingent on the outcome of the case studies, we develop specific hypotheses and construct measures and survey questionnaire to collect data to identify the determinant factors of the IT staffing strategies as well as the impacts of these strategies on the organizations' capitals and performance.

## Conclusion

In this paper, we identified IT agile staffing strategies, and developed a conceptual model for the determinants of IT staffing strategies as well as the possible impacts of such strategies on organizations. We plan to use this model for testing of hypotheses regarding the relationships specified in the model. Companies could use the results of such a study to gain insight in the development of their IT staffing strategies.

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